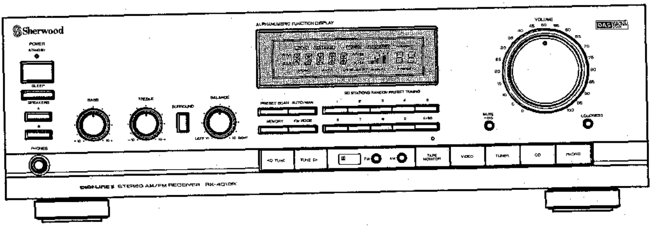
SERVICE MANUAL

RX-4010R

AM/FM
STEREO RECEIVER


Sherwood
POWER
ALPHANUMERIC FUNCTION DISPLAY
VOLUME
BASS
TREBLE
SURROUND
BALANCE
PRESET SCAN
AUTO/MAN
MEMORY
FM MODE
MUTE
LOUDNESS
PHONES
TAPE MONITOR
VIDEO
TUNER
CD
PHONO
STEREO AM/FM RECEIVER RX-4010R

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Sherwood

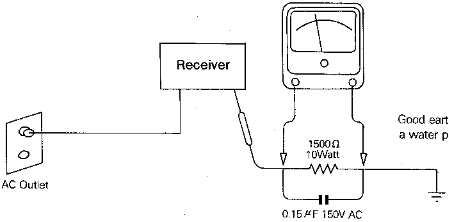
Safety Precaution

WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

1. Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.
   Replacement parts that have these special safety characteristic are identified in this manual and its supplements : electrical components having such features are identified by a ⚠ in the schematic diagram and the parts list.
   Before replacing any of these components, read the parts list in this manual carefully.
   The use of substitute replacement parts that do not have the same safety characterstics as specified in the parts list may create shock, fire or other hazards.
2. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet(**120V Version only**).(Do not use a line isolation transformer during this check.)
   Use an AC voltmeter having 5000Ω per volt or more sensitivity in the following manner :
   Connect a 1500Ω 10watte resistor paralleled by a 0.15μF 150V AC capacitor, between a known good earth ground(water pipe, conduct, etc.)and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500Ω resistor and 0.15μF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

AC VOLT METER
(5000Ω per volt or more sensitivity)
Reading should not exceed 0.8V



Place this probe on each exposed metallic part.

Specifications

Tuning Range

Scanning Frequency Interval(Auto / Manual) ;	
USA / Canada Version	87.50-107. 90MHz / 200kHz
Europe / Australia Version	87.50-108. 00MHz / 50kHz
Usable Sensitivity	
IHF at S + N + D / ND=30dB	11.2dBf
THD at 1kHz ;	
HIF at 75kHz mod. Mono	0.2%
(40kHz for DIN) Stereo	0.4%
Stereo Seperation at 1kHz	45dB
Signal to Noise Ratio	
HIF at 75kHz mod. Mono	70dB
Stereo	65dB
Frequency Response 20Hz-15kHz	±1.5dB
Audio Output Voltage, 1kHz, 100% Mod	600mV
Capture Ratio	2dB
Altemate channel selectivity	60dB
Image Rejection	40dB
IF Rejection	60dB
AM Rejection	50dB
Muting Level	10µV

AM Section

Tuning Pange	
AM USA / Canada Version	520-1710kHz
Europe / Australia Version	522-1611kHz
Scanning Frequency interval(Auto / Manual)	
USA / Canada Version	10kHz
Europe / Australia Version	9kHz
Usable Sensitivity IHF at 20dB S / N Loop Antenna	
AW	500µV / m
Signal to Noise Ratio, 30% Mod ref.	
AW	45dB
Audio Output Voltage, 400Hz, 30% Mod	500mV
Power Consumption	280 Watts

Power Requirements ;
A : 120V 60Hz for American / Canadian version
B : 120 / 220V, 60 / 50Hz for multi-voltage version(switchable)
C : 230V 50Hz for general Europian version
D : 230V 50Hz for Germanian / Italian version
E : 240V 50Hz for U.K / Austalian version
F : 230V 50Hz for Swiss / Scandinabian version

Dimensions	440(W) × 125(H) × 280(D)mm 17.3(W) × 4.9(H) × 11.0(D)inch
Weight(Net)	7.2kg(16lbs, 13oz)

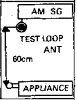
Note : Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the American (A) standard, and provides information on regional cir-cuit modification through use of alternate schematic diagrams or wiring diagram, and information on regional component variations through use of parts list. Design and specifications subject to change without notice for improvement.

Alignment Procedures

***Before making adjustment, operate the appliance for more than 2 minutes.**
*Note : 1. 0dB=1V 2. FM 100% Mod=75kHz Dev. 3. DVM=Digital Volt Meter
4. SG=Signal Generator 5. SSG=Stereo Signal Generator

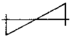
1. AM Adjustment

- Selector SW.··············Tuner, AM
- *In case of 2 band appliance(AM/FM).*

No	Subject	Feed Signal		Setting	Measure	Adujst	Adujst	Remark
		From	To	Appliance	Output	Point	For	
1.	Tuning Voltage	520kHz		*1) 520kHz	Connect DVM to TP1	T104	DC 1.2±0.2V	
		1710kHz		*2) 1710kHz		TC102	DC 8.6±0.2V	
		●Repeat the step*1) and *2) until DVM reads the tuning voltage mentioned above. ●In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1) 522kHz *2)1611kHz						
2.	IF	AM IF Genescope	ANT.		Connect IF Genescope	T105	Symmetrical curve on AM IF Genescope	
3.	RF Tuning	*1) AM SG 600kHz, 74dB 400Hz(30&MOD.)	ANT.	600kHz	Output Connect AC Voltmeter & Oscilloscope	T101	Maximize audio output	
		AM SG 1400kHz, 74dB 400Hz(30%MOD.)	ANT	1400kHz		TC101		
		●Feed Signal should be fed to Loop ant. through the TEST Loop ant.,60cm distant from the appliance ●Repeat the step *1) & *2)until no further improvement occurs. ●In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1)603kHz *2)1404kHz						
4.	Tuned Level	AM SG 1000kHz, 80dB 400Hz(30% mod.)	ANT.	1000kHz		VR101	'Tuned' Light on	In FL Display
	●In case the freq. step is 9kHz, the freq. of AM SG and appliance should be changed to 999kHz.							

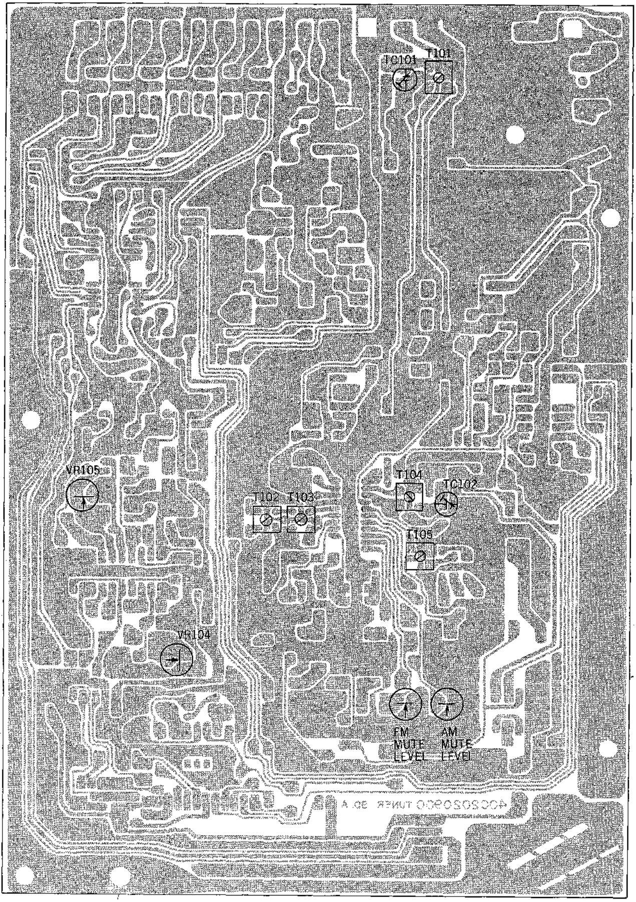
2. FM Adjustment

- Selector SW············ TUNER, FM(Mono/Stereo)
- Deviation·················USA/CANADA(75kHz Dev) EUROPE(40kHz Dev.)

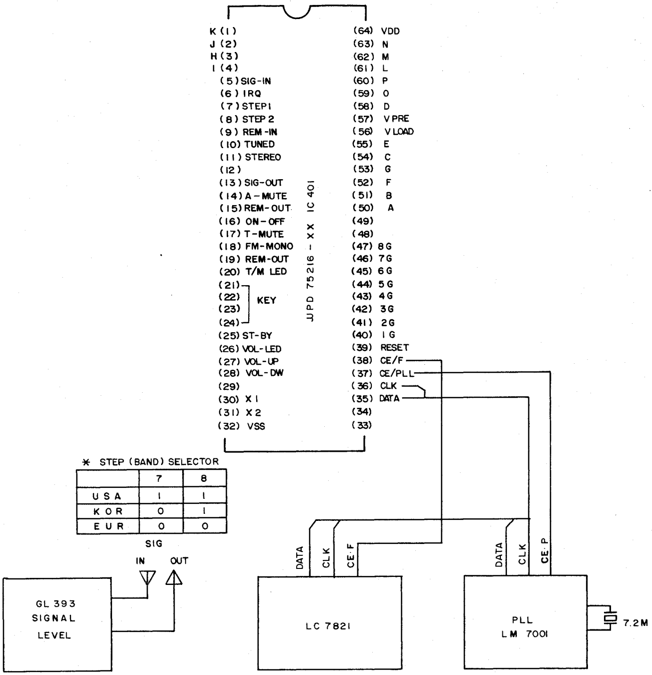
No	Subject	Feed Signal		Setting	Measure	Adujst	Adujst	Remark
		From	To	Appliance	Output	Point	For	
1.	Tuning Voltage			87.50MHz 107.90MHz	Connect DVM to TP1		DC2.0±0.2V DC8.8±0.2V	
2.	IF	FM IF Genescope	ANT.	98MHz 60dB	TP2 & TP3 Connect IF Genescope	T103	Symmetrical S curve on FM IF Genescope	
					TP2 &TP3 Connect DVM		DC 0±50mV	
				Detune	Connect Oscilloscope	T103	Maximize noise output	In case IF Genescope is not available
					TP2 & TP3 Connect DVM		DC 0±50mV	

No	Subject	Feed Signal		Setting Appliance	Measure Output	Adjust Point	Adjust For	Remark
		From	To					
3.	THD (Mono)	FM SG 98.10MHz,60dB	ANT.	98.10MHz Mono	*1)Output Connect DVM	T102	DC 0±0.05V	
		1kHz (75kHz dev.)			*2)Output Connect AC Voltmeter & Distortion Analyzer		Minimize distortion	
		●Adjust the step *1) 1st and the step *2) next and repeat until no further improvement occurs.						
4.	MPX (VCO)	FM SSG 98.10MHz,60dB 1kHz (75kHz Dev.) Pilot 19kHz (9% Mod.)	ANT.	98.10MHz Mono	TP4 Connect freq.Counter	VR104	Read 76kHz	
		●Before adjustment,set the FM SSG to "Mod. OFF"						
5.	THD (Stereo)	FM SSG 98.10MHz,60dB 1kHz (75kHz Dev.) Pilot 19kHz (9% Mod.)	ANT.	98.10MHz Stereo	Output connect AC voltmeter & distortion	Front–End	Minimize distortion	
6.	Mute Level	FM SSG 98.10MHz,10μV (5μV for Europe) 1kHz(75kHz Dev.) (40kHz dev.for Europe)	ANT.	98.10MHz Stereo	Output connect Oscilloscope	VR102	Muting occurs marginally	
7.	Separation	*1) FM SSG 98.10MHz,60dB 1kHz(75kHz,Dev) Pilot19kHz(9%Mod) (Lch→Rch)	ANT.	98.10MHz Stereo	R ch Mod connect AC voltmeter & distortion analyzer and oscilloscope	VR105	Minimize output	L ch Mode
		*2) Same as above (Rch→Lch)			L ch Mod connect same as above		Minimize output	R ch Mode
		●Repeat the step *1) and *2) until no further improvement occurs.						

Adjustment Point


TC101
T101
VR105
T102
T103
T104
TC102
T105
VR104
FM MUTE LEVEL
AM MUTE LEVEL

Circuit Description
Pin Assignment



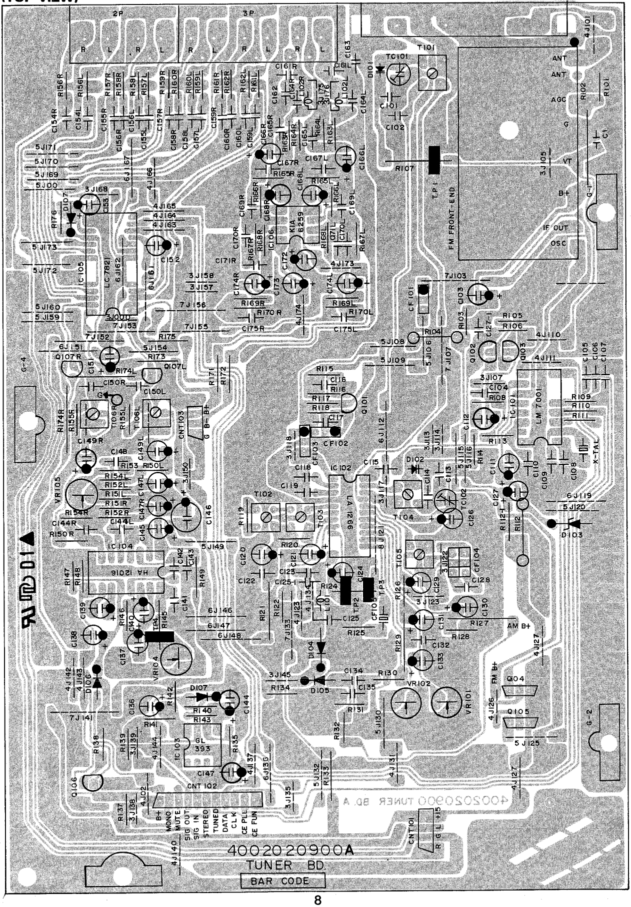
K (1)
J (2)
H (3)
I (4)
(5) SIG-IN
(6) IRQ
(7) STEP1
(8) STEP 2
(9) REM-IN
(10) TUNED
(11) STEREO
(12)
(13) SIG-OUT
(14) A-MUTE
(15) REM-OUT
(16) ON-OFF
(17) T-MUTE
(18) FM-MONO
(19) REM-OUT
(20) T/M LED
(21)
(22)
(23)
(24)
KEY
(25) ST-BY
(26) VOL-LED
(27) VOL-UP
(28) VOL-DW
(29)
(30) X1
(31) X2
(32) VSS
UPD 75216 - XX IC 401
(64) VDD
(63) N
(62) M
(61) L
(60) P
(59) O
(58) D
(57) V PRE
(56) V LOAD
(55) E
(54) C
(53) G
(52) F
(51) B
(50) A
(49)
(48)
(47) 8G
(46) 7G
(45) 6G
(44) 5G
(43) 4G
(42) 3G
(41) 2G
(40) 1G
(39) RESET
(38) CE/F
(37) CE/PLL
(36) CLK
(35) DATA
(34)
(33)
SIG
IN
OUT
GL 393
SIGNAL
LEVEL
DATA
CLK
CE·F
LC 7821
DATA
CLK
CE·P
PLL
LM 7001
7.2M

* STEP (BAND) SELECTOR

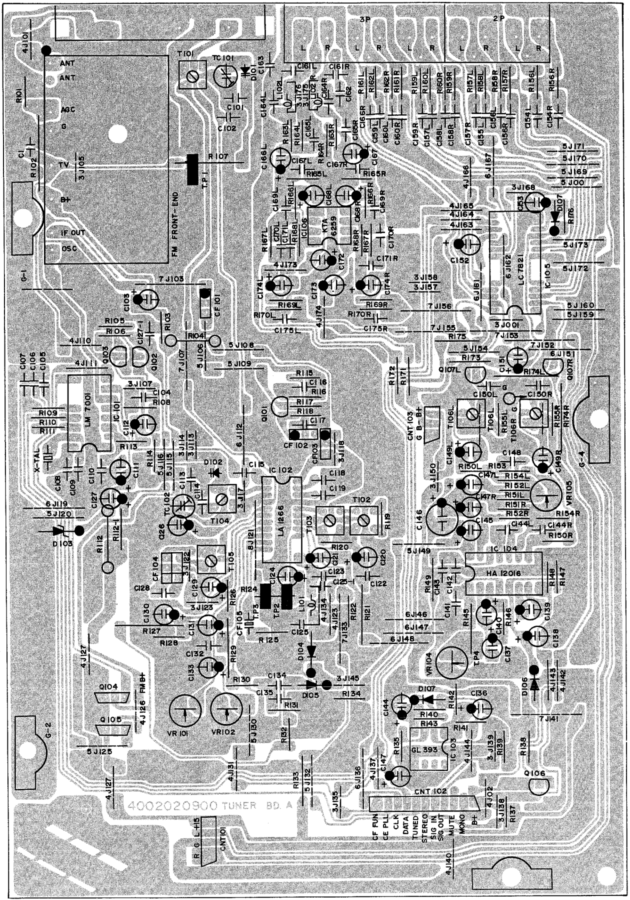
	7	8
USA	1	1
KOR	0	1
EUR	0	0

P.C. Boards(Top & Bottom Views)

TUNER P.C. BOARD 4002020900A
(TOP VIEW)


2P
3P
R
L
T101
TC101
ANT
AGC
G
VT
B+
IF OUT
OSC
FM FRONT-END
T.P.1
R107
R101
R102
C1
4J101
Q-1
G-4
G-2
IC105
LC7821
IC106
KIA 6259
IC101
LM7001
X-TAL
IC102
LA1266
IC104
HA12016
IC103
GL 393
CF101
CF102
CF103
CF104
T102
T103
T104
T105
T106R
T106L
VR101
VR102
VR104
VR105
Q101
Q102
Q103
Q104
Q105
Q106
Q107R
Q107L
D101
D102
D103
D104
D105
D106
D107
TC102
TP2
TP3
TP4
CNT101
CNT102
CNT103
G B- B+
AM B+
FM B+
B+
MONO
MUTE
SIG OUT
SIG IN
STEREO
TUNED
DATA
CLK
CE PLL
CE FUN
R G L +15
4002020900A
TUNER BD.
BAR CODE

(BOTTOM VIEW)

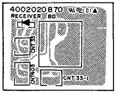


3P
2P
L R L R L R
L R L R L R
ANT
ANT
AGC
G
TV
B+
IF OUT
OSC
FM FRONT-END
T101
TC101
D101
T.P1
R107
3J105
4J101
R101
R102
C1
G-1
G-2
G-4
IC105
LC7821
IC106
KTA 6259
IC101
LM7001
IC102
LA1266
IC104
HA12016
IC103
GL393
CF101
CF102
CF103
CF104
CF105
X-TAL
T102
T103
T104
T105
T106L
T106R
VR101
VR102
VR104
VR105
Q101
Q102
Q103
Q104
Q105
Q106
Q107L
Q107R
D102
D103
D104
D105
D106
D107
T.P2
T.P3
TP4
L101
L102L
L102R
CNT103 G B- B+
CNT102
CF FUN
CE PLL
CLK
DATA
TUNED
STEREO
SIG IN
SIG OUT
MUTE
MONO
B+
CNT101
R G L +15
FM B+
4002020900 TUNER BD. A

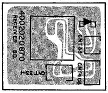
9

RECEIVER P.C. BOARD 4002020870

(TOP VIEW)

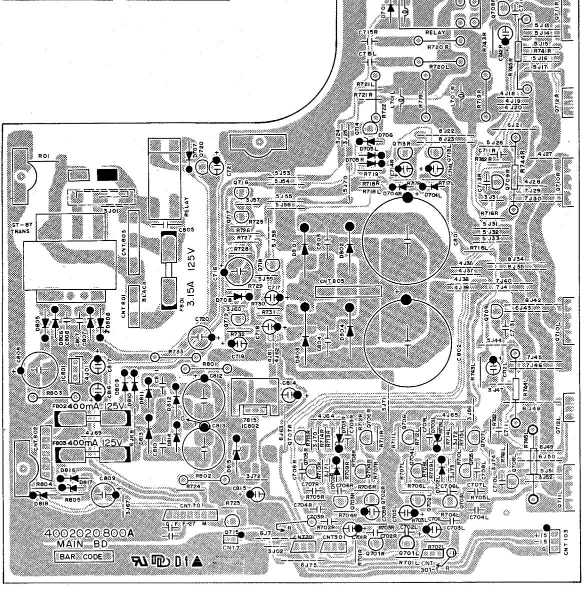

4002020870
RECEIVER BD
CNT33
CNT403
CNT 33-1

(BOTTOM VIEW)


4002020870
RECEIVER BD
CNT33
CNT403
CNT 33-1

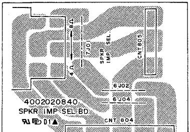
MAIN P.C. BOARD 4002020800A

(TOP VIEW)

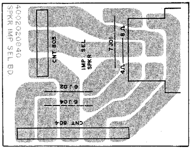

SPKR
FTZ
8J10
CNT 702
5J11
5J12
D701
RELAY
C715R
C715L
R720R
R720L
R721L
R721R
R722
L701L
R719L
L701R
R719R
R743R
Q708R
C710R
C742R
R745R
R741R
5J13
5J14
5J15
5J16
5J17
4J18
4J19
4J20
6J21
Q711R
Q712R
Q710R
R01
ST-BY TRANS
3J01
CNT803
CNT801
BLACK
C805
RELAY
F801
3.15A 125V
D707
Q720
C721
Q716
3J57
5J53
5J54
5J55
5J56
5J58
Q717
R725
R726
R727
R728
Q718
C716
3J59
R729
C717
D708
R730
R731
3J60
Q719
C718
C720
R732
C719
R733
D801
C803
D802
C801
CNT 805
D803
C804
D804
C802
Q714
D706
D705L
D705R
Q713R
C714R
C714L
Q713L
R719
R718R
R718L
R717R
R717L
D704R
D704L
8J22
8J23
C711R
R742R
R744R
Q709R
C713R
3J31
R716R
R716L
5J26
4J27
4J28
7J29
7J30
5J31
5J32
5J33
8J34
8J35
4J36
4J37
4J38
4J39
7J40
7J41
8J42
6J43
Q709L
C713L
5J44
7J45
7J46
C712L
R743L
R744L
3J47
8J48
6J49
6J50
5J51
3J52
Q710L
Q712L
Q711L
D805
D806
C806
C807
D807
D808
C808
IC801
4J01
C817
C816
R803
D809
D810
D811
C811
D812
D813
D814
C810
R801
C812
C813
7815
IC802
C814
F802 400mA 125V
F803 400mA 125V
CNT 802
4J69
6J68
D816
D817
R804
R805
D818
C809
3J67
D815
R802
R724
3J72
C815
CNT 701
R723
Q715
6J7
CNT7
3J02
6J75
4J64
4J65
3J66
6J63
5J71
Q707R
Q705R
Q706R
Q706L
Q707L
Q705L
C708R
C707R
R705R
C704R
C703R
R704R
R702R
C701R
Q701R
R701R
CNT201
CNT301
Q702R
Q703R
C706R
R706R
C705R
R703R
C702R
C702L
C701L
C703L
R704L
C704L
C705L
R705L
Q701L
R701L
R702L
CNT 301-1
R
L
CNT 103
4002020800A
MAIN BD
BAR CODE

SPKR IMP SEL P.C.BOARD 4002020840

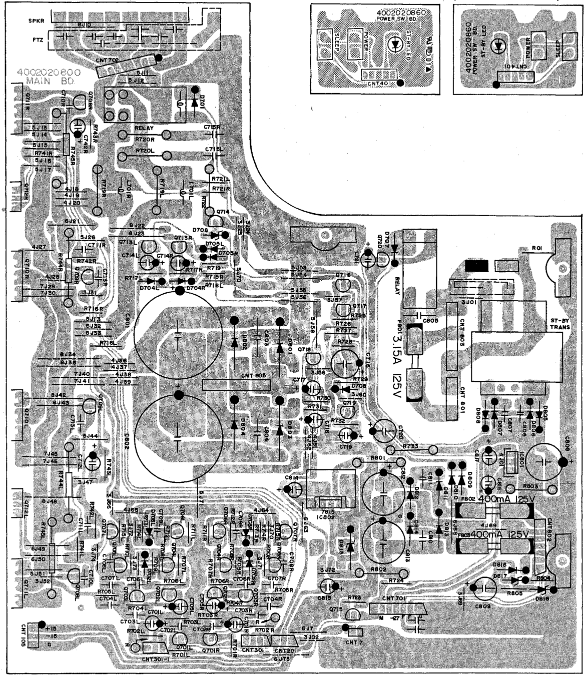
(TOP VIEW)


8Ω
4Ω
7J01
SPKR IMP SEL
CNT805
6J02
6J04
4002020840
SPKR IMP SEL BD
CNT 804

(BOTTOM VIEW)


4002020840
SPKR IMP SEL BD
CNT 805
IMP SEL
SPKR
7J01
8Ω
4Ω
6J02
6J04
CNT 804

(BOTTOM VIEW)


4002020800
MAIN BD.
SPKR
FTZ
CNT 702
RELAY
3.15A 125V
ST-BY TRANS
400mA 125V
400mA 125V
CNT 805
CNT 803
CNT 801
CNT 802
CNT 701
CNT 105
CNT 301
CNT 201
CNT 7
IC 802
IC 801
7815
R01

POWER SW P.C. BOARD 4002020860

(TOP VIEW)

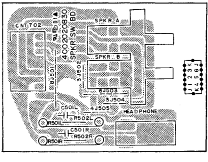
4002020860
POWER SW BD
SLEEP
POWER
ST-BY LED
CNT401

(BOTTOM VIEW)

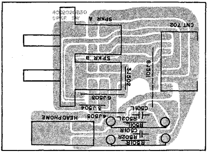
4002020860
POWER SW BD.
ST-BY LED
POWER
SLEEP
CNT401

SPKR SW P.C. BOARD 4002020830

(TOP VIEW)

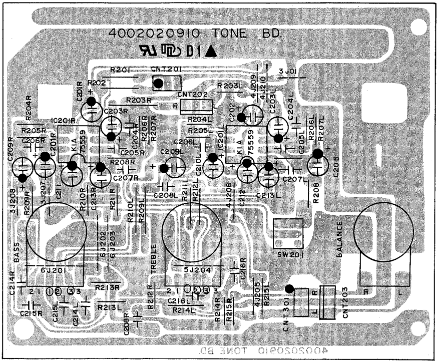

CNT 702
4002020830
SPKR SW BD
SPKR A
SPKR B
8J501
3J502
6J503
3J504
4J505
C501L
R501L
R502L
C501R
R501R
R502R
HEADPHONE

(BOTTOM VIEW)

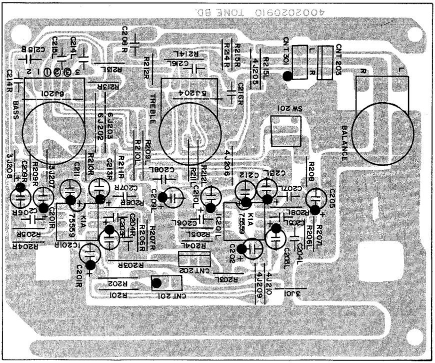

4002020830
SPKR SW
SPKR A
SPKR B
CNT 702
8J501
3J502
6J503
3J504
4J505
C501L
R502L
R501L
C501R
R502R
R501R
HEADPHONE

TONE P.C. BOARD 4002020910

(TOP VIEW)

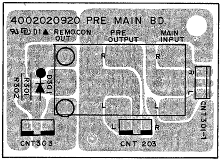

4002020910 TONE BD.
D1▲
R201
CNT201
3J01
R202
C201R
R203L
4J209
4J210
CNT202
R203R
R204R
C203R
C202
C203L
C204L
R204L
R205R
IC201R
R205L
R206R
R207R
R206L
R207L
C206R
C201R
KIA 75559
C204R
C206L
IC201L
C205R
C205L
C209R
C209L
C210L
C208R
C207R
C207L
C205
C211
C213R
R211R
C208L
R211L
R212L
4J206
C212
C213L
R208
3J208
R209R
3J207
R210R
R210L
R209L
6J202
6J203
TREBLE
BASS
SW201
BALANCE
6J201
5J204
C216R
C214R
R213R
R212R
4J205
R215L
CNT301
CNT203
C215R
C215L
C214L
R213L
C216L
R214L
R214R
R215R
C208R
R
L

(BOTTOM VIEW)

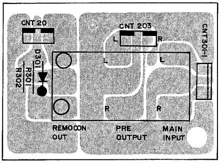

C208R
C215L
C214L
C215R
R212R
R214R
R215R
R214L
C216L
R215L
4J205
CNT301
CNT203
C214R
R213R
6J201
5J204
C216R
SW201
BASS
TREBLE
BALANCE
6J203
6J202
R209L
R210L
R211R
C213R
R210R
C211
4J206
R211L
R212L
R208
C209R
R209R
3J207
3J208
C208L
C212
C213L
C207L
C205
C207R
C209L
C210L
IC201L
KIA 75559
IC201R
C201R
R205R
R204R
R206R
R207R
C204R
R205L
R204L
C206L
R208L
R207L
R206L
C203L
C204L
C202
R203R
CNT202
R203L
4J209
4J210
R202
R201
CNT201
3J01
R
L

PRE MAIN P.C. BOARD 4002020920

(TOP VIEW)

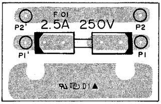

4002020920 PRE MAIN BD.
D1▲
REMOCON OUT
PRE OUTPUT
MAIN INPUT
R
R302
R301
D301
L
CNT301-1
CNT303
CNT 203

(BOTTOM VIEW)

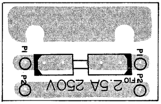

CNT 20
CNT 203
CNT301-1
L
R
D301
R301
R302
REMOCON OUT
PRE OUTPUT
MAIN INPUT

FUSE P.C. BOARD

(TOP VIEW)

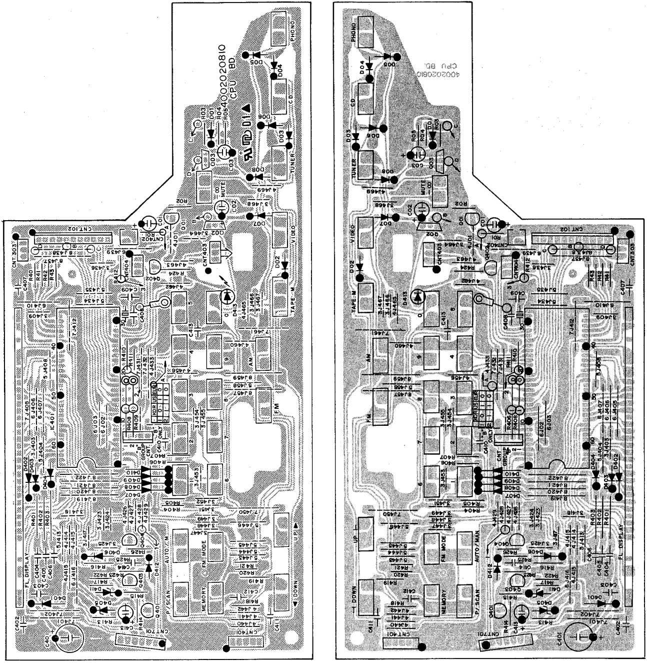

F01
2.5A 250V
P2'
P2
P1'
P1
D1▲

(BOTTOM VIEW)


P1
P1
P2
P2
F01
2.5A 250V

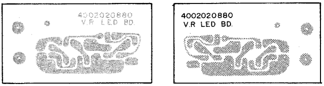
CPU P.C. BOARD 4002020810

(TOP VIEW) (BOTTOM VIEW)


4002020810
CPU BD
PHONO
CD
TUNER
MUTE
VIDEO
TAPE-M
AM
FM
UP
DOWN
MEMORY
P/SCAN
FM MODE
AUTO/MAN
FL DISPLAY
CNT102
CNT303
CNT401
CNT402
CNT403
CNT404
CNT701
IC401
D413
C401
C402

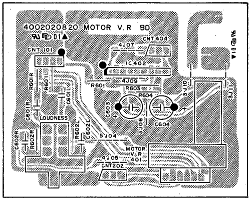
V.R. LED P.C. BOARD 4002020880

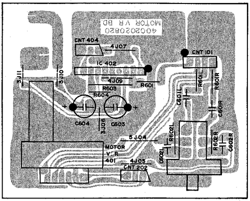
(TOP VIEW) (BOTTOM VIEW)


4002020880
V.R LED BD.
4002020880
V.R LED BD.

MOTOR V.R. P.C. BOARD 4002020820

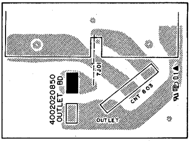
(TOP VIEW) **(BOTTOM VIEW)**

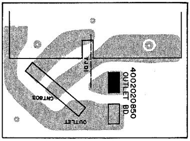

4002020820 MOTOR V.R BD
01
CNT404
CNT 101
4J07
IC402
R601
4J09
R603
R604
R601R
R601L
C601L
C601R
LOUDNESS
C603
C604
3J06
3J10
3J11
C602R
R602R
R602L
C602L
5J04
MOTOR V.R 401
4J05
CNT202


CNT 404
4J07
CNT 101
IC 402
3J11
3J10
4J09
R601
R603
R604
C604
C603
3J06
R601L
R601R
C601L
C601R
5J04
R602L
C602L
MOTOR V.R 401
4J05
CNT 202
R602R
C602R

OUTLET P.C. BOARD 4002020850

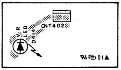
(TOP VIEW) **(BOTTOM VIEW)**

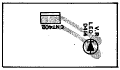

4002020850 OUTLET BD
7J01
CNT 803
OUTLET
01


7J01
4002020850 OUTLET BD

V.R LED P.C. BOARD 4002020880

(TOP VIEW) **(BOTTOM VIEW)**


V.R LED D414
CNT402
01



Electrical Parts List

PRODUCT SAFETY NOTICE : Products Marked with ⚠ have special characteristics important to safety. If you replace any of these components, carefully read the product safety notice of this manual. Don't degrade the safety of the Product through improper servicing.
Resistors & Capacitors tolerance, D(±5%),J(±0.5), K(±10%), M(±20%), Z(+80%,-20%).

Main Board 4002020800

Capacitors

Ref.No	Part No.	Description	Remark
C701L/R	3479233971	Electric SA 3.3μF 50V M	
C702L/R	3579331130	Ceramic 330pF 50V J	
C703L/R	·	Not used !	
C704L/R	3579309030	Ceramic 3pF 50V J	
C705L/R	3479233031	Electric SA 33μF 16V M	
C706L/R	3579471130	Ceramic 470pF 50V J	
C707L/R	3579309030	Ceramic 3pF 50V J	
C708L/R	3579270130	Ceramic 27pF 50V J	
C709L/R	3679473120	Mylar 0.047μF 100V J	
C710L/R	3579221130	Ceramic 220pF 50V J	
C711L/R	3579102530	Ceramic 1000pF 50V J	
C712L/R	3479247871	Electric SA 0.47μF 50V M	
C713L/R	3579221130	Ceramic 220pF 50V J	
C714L/R	3479247971	Electric SA 4.7μF 50V M	
C715L/R	3679473120	Mylar 0.047μF 100V J	
C716	3409247119	Electric SA 470μF 6.3V M	
C717	3479247971	Electric SA 4.7μF 50V M	
C718	3479222071	Electric SA 22μF 50V M	
C719	3409210139	Electric SA 100μF 16V M	
C720	3409210169	Electric SA 100μF 35V M	
C721	3479210971	Electric SA 1μF 50V M	
C801/C802	3419568280	Electric SA 6800μF 63V M	
C803/C804	3609334120	Mylar 0.33μF 100V J	
	3509103450	Ceramic 0.01μF 500V J	D
C805	3549472407	Ceramic AC 0.0047μF 400V J	
C806/C807	3679683120	Mylar 0.068μF 100V J	
(C806/C807)	3509103450	Ceramic 0.01μF 500V J	D
C808	3409247149	Electric SA 470μF 25V M	
C809	3409210169	Electric SA 100μF 35V M	
C810/C811	3679683120	Mylar 0.068μF 100V J	
(C810/C811)	3509103450	Ceramic 0.01μF 500V J	D
C812/C813	3409247169	Electric SA 470μF 35V M	
C814/C815	3479247041	Electric SA 47μF 25V M	
C816	•	Not used !	
C817	3479247041	Electric SA 47μF 25V M	
•	3579472530	Ceramic 0.0047μF 50V J	D

Connectors

Ref.No	Part No.	Description	Remark
CNT103	4119103403	Assy 3P 400mm to Tuner BD	
CNT201	4428505710	Plug 3P	
CNT301	4428505710	Plug 3P	
CNT3011	4428505710	Plug 3P	
CNT701	4428505410	Plug 7P	
CNT702	4119108309	Assy 8P 300mm to Speaker Switch B'D	
CNT801	4428525780	PCB Pin 2P	
CNT802	4428505410	Plug 7P	
CNT803	4428525790	PCB Pin 3P	
CNT805	4428525790	PCB Pin 3P	

Coils

Ref.No	Part No.	Description	Remark
L701L/R	2648001010	Inductor, 0.5μH	

Diodes

Ref.No	Part No.	Description	Remark
D701	2258100135	1N4002	
D702L/R	2058306101	1N4148	
D703L/R	2258522119	Zener 12BM	
D704L/R	2058306101	1N4148	
D705L/R	2058306101	1N4148	
D706	2258522118	Zener 11BM	
D707	2258100135	1N4002	
D708	2058306101	1N4148	
D801–D804	2058100136	1N5402	
D805–D814	2258100135	1N4002	
D815	2258522121	Zener 15BM	
D816	2258100135	1N4002	
D817	2258522110	Zener 5.1BM	
D818	2258599115	Zener 27BM	

Fuses

Ref.No	Part No.	Description	Remark
F801	5508202721	NB20mm 3.15A 20mm 125V	A
(F801)	5508302435	T2.0A 20mm 250V	C,D,E,F
(F801)	5508202730	NB3.15A 20mm 250V(KS)	DOM.
F802/F803	5508201521	NB 400mA 20mm 125V	A
(F802/F803)	5508301534	NB T400mA 20mm 125V	C,D,E,F
(F802/F803)	5508201530	NB 400mA 20mm 125V	DOM.

IC

Ref.No	Part No.	Description	Remark
IC802	2168601105	GD7815	

Resistors : All Resistors are 1/5W carbon film ±5% tolerance, unless otherwise specified. M is metal film, M.O is metal oxide and C is cement type.

Ref.No	Part No.	Description	Remark
R701L/R	3069102970	1kΩ	
R702L/R	3069102970	1kΩ	
R703L/R	3069393970	39kΩ	
R704L/R	3069102970	1kΩ	
R705L/R	3069223970	22kΩ	
R706L/R	3069681970	680Ω	
R707L/R	3069103970	10kΩ	
R708L/R	3069221970	220Ω	
R709L/R	3069221970	220Ω	
R710L/R	3069680970	68Ω	
R711L/R	3069221970	220Ω	
R712L/R	3069102970	1kΩ	
R713L/R	3069103970	10kΩ	
R714L/R	3069103970	10kΩ	
R715L/R	3069680970	68Ω	
R716L/R	3069222970	2.2kΩ	
R717L/R	3069222970	2.2kΩ	
R718L/R	3069153970	15kΩ	
R719	3069223970	22kΩ	
R719L/R	3039100476	10Ω 1W	
R720L/R	3039100476	10Ω 1W	
R721L/R	3069123970	12kΩ	
R722	3039479476	M.O., 4.7Ω 1W	
R723/R724	3069332970	3.3kΩ	
R725	3069473970	47kΩ	
R726	3069103970	10kΩ	

Ref.No	Part No.	Description	Remark
R727	3069105970	1MΩ	
R728	3069152970	1.5kΩ	
R729	3069183970	18kΩ	
R730	3069223970	22kΩ	
R731/R732	3069101970	100Ω	
R733	3039222476	M.O., 2.2kΩ 1W	
R734–R740	•	Not used !	
R741L/R	3069102970	1kΩ	
R742L/R	3069242970	2.4kΩ	
R743L/R	3069181970	180Ω	
R744L/R	3059278682	0.27Ω 3W	
R745L/R	3059278682	0.27Ω 3W	
R801	3039479476	M.O 4.7Ω 1W	
R802	3039681372	M.680Ω 1/2W	
R803	3039820476	M.O 82 1W	
R804	3069682970	6.8kΩ	
R805	3069271970	270Ω	

Relay

•	5528001320	Speaker, VB24MB–510UL/24VDC	
•	5528001250	Transformer, VS12MBNR12V	

Transistors

Q701L/R	2208606112	2SD1302 NPN	
Q702L/R	2208606108	KTC2240BL NPN	
Q703L/R	2208606108	KTC2240BL NPN	
Q704L/R	2208206105	KTA1015 PNP	
Q705L/R	2208206102	KTA949 PNP	
Q706L/R	2208606104	KTC1815 NPN	
Q707L/R	5508606107	KTC2229Y NPN	
Q708L/R	2228106107	2SA965 PNP	
Q709L/R	2228406120	2SC2235 NPN	
Q710L/R	2028407109	2SD718, With MICA NPN	
Q711L/R	2028107106	2SB688, With MICA NPN	
Q712L/R	2208606114	MPSA06 NPN	
Q713L/R	2208606104	KTC1815 NPN	
Q714	2208606114	MPSA06 NPN	
Q715	2208206105	KTA1015 PNP	
Q716	2208606104	KTC1815 NPN	
Q717	2208606114	MPSA06 NPN	
Q718	2208206105	KTA1015 PNP	
Q719/Q720	2208606114	MPSA06 NPN	

Transformers

•	2828066207	STBY Trans 120V/60Hz	A
•	2828069807	STBY Trans 230V/50Hz	C,D,F
•	2828069907	STBY Trans 240V/50Hz	E
•	2828072607	STBY Trans 110V/220V	DOM.
•	2828082201	Main Trans 120V/60Hz	A
•	2828083601	Main Trans 230V/50Hz	C,D,F
•	2828084501	Main Trans 240V/50Hz	E
•	2828084601	Main Trans 110V/220V	DOM.

Tuner Board 4002020900

Capacitors

Ref.No	Part No.	Description	Remark
C1	3579103530	Ceramic 0.01µF 50V J	D
C101/C102	3579473530	Ceramic 0.047µF 50V J	
C103	3479210131	Electric SA 100µF 16V M	
C104	3579223530	Ceramic 0.022µF 50V J	
C105	3579101130	Ceramic 100pF 50V J	
C106/C107	•	Not used !	
C108/C109	3529270210	Ceramic CH 27pF 50V J	
C110	3579103530	Ceramic 0.01µF 50V J	
C111	3479247041	Electric SA 47µF 25V M	
C112	3479210971	Electric SA 1µF 50V M	
C113	3619471110	Poly 470pF 50V J	
C114	•	Not used !	
C115	3579103530	Ceramic 0.01µF 50V J	
C116/C117	3579203530	Ceramic 0.02µF 50V J	
C118/C119	3579473530	Ceramic 0.047µF 50V J	
C120	3479210071	Electric SA 10µF 50V M	
C121	3479247971	Electric SA 4.7µF 50V M	
C122	3579103530	Ceramic 0.01µF 50V J	
C123	3579331130	Ceramic 330pF 50V J	
C124	3479210971	Electric SA 1µF 50V M	
C125	3579101130	Ceramic 100pF 50V J	D
C125–1	3579820130	Ceramic 82pF 50V J	D
C126	3479210071	Electric SA 10µF 50V M	
C127	3479247041	Electric SA 47µF 25V M	
C127–1	3579103530	Ceramic 0.01µF 50V J	
C128	3579470130	Ceramic 47pF 50V J	
C129/C130	3479210071	Electric SA 10µF 50V M	
C131	3479233971	Electric SA 3.3µF 50V M	
C132	3679223120	Mylar 0.022µF 100V J	
C133	3479210071	Electric SA 10µF 50V M	
C134	3679563120	Mylar 0.056µF 100V J	
C135	3679332120	Mylar 0.0033µF 100V J	
C136	3479210071	Electric SA 10µF 50V M	
C137	3479233971	Electric SA 3.3µF 50V M	
C138	3479210971	Electric SA 1µF 50V M	
C139	3479233971	Electric SA 3.3µF 50V M	
C140	3479210971	Electric SA 1µF 50V M	
C141	3619102110	Poly 1000pF 50V J	
C142	3679473120	Mylar 0.047µF 100V J	
C143	3619681110	Poly 680pF 50V J	
C144	3479210971	Electric SA 1µF 50V M	
(C144L/R)	3679152120	Mylar 0.0015µF 100V J	A, DOM.
(C144L/R)	3679102120	Mylar 0.001µF 100V J	C,D,E,F
C145	3479233971	Electric SA 3.3µF 50V M	
C146	3409222139	Electric SA 220µF 16V M	
C147	3479247871	Electric SA 0.47µF 50V M	
C147L/R	3479222071	Electric SA 22µF 50V M	
C148	3579151130	Ceramic 150pF 50V J	
C149L/R	3479222971	Electric SA 2.2µF 50V M	
C150L/R	3679392120	Mylar 0.0039µF 100V J	
C151/C152	3479247041	Electric SA 47µF 25V M	
C153	3479210971	Electric SA 1µF 50V M	
C154L/R	3579101130	Ceramic 100pF 50V J	
C155L/R	3579101130	Ceramic 100pF 50V J	
C156L/R	3579101130	Ceramic 100pF 50V J	D
C157L/R	3579101130	Ceramic 100pF 50V J	
C158L/R	3579101130	Ceramic 100pF 50V J	D
C159L/R	3579101130	Ceramic 100pF 50V J	
C160L/R	3579101130	Ceramic 100pF 50V J	D
C161L/R	•	Not used !	
C162	•	Not used !	
C163	3579473530	Ceramic 0.047µF 50V J	
C164L/R	•	Not used !	
C165L/R	3579101130	Ceramic 100pF 50V J	
C166L/R	3479210071	Electric SA 10µF 50V M	
C167L/R	3579100130	Ceramic 10pF 50V J	
C168L/R	3479247041	Electric SA 47µF 25V M	
C169L/R	3579222530	Ceramic 0.0022µF 50V J	
C170L/R	3679182120	Mylar 0.0018µF 100V J	

Ref.No	Part No.	Description	Remark
C171L/R	3679562120	Mylar 0.0056µF 100V J	
C172/C173	3479247041	Electric SA 47µF 25V M	
C174L/R	3479268871	Electric SA 0.68µF 50V M	
C175L/R	3679152120	Mylar 0.0015µF 100V J	
Trimmer			
TC101/TC102	2838001010	Capacitor, 20pF	
Ceramic Filters			
CF101/CF102	3908011001	SFE 10.7MA8H–A–TE20	A
(CF101/CF102)	3908011011	SFE 10.7MS3GH	C,E,F
CF101–CF103	3908011011	SFE 10.7MS3GH	D
CF104	3908001150	SFZ450	
CF105	3908001020	BFU450C	
Connectors			
CNT101	4428505610	Plug 4P	
CNT102	4428510710	Plug 11P	
CNT103	4428505710	Plug 3P	
Coils			
L101	2648601430	Inductor, 20.8mH	D
T101	2608201120	AM ANT	
T102	2838501210	FM DET(B)	
T103	2838501110	FM DET(A)	
T104	2638201150	AM OSC	
T105	2648001250	AM TFT	
T106L/R	2658301100	MPX Filter 19kHz	D
Diodes			
D101/D102	2058819106	Varactor KV1236Z	
D103	2258522110	Zener 5.1BM.	
D104/D105	2058306101	1N4148	
D106/D107	2058306101	1N4148	
IC's			
IC101	2138017112	LM7001	
IC102	2168017128	LA1266	
IC103	2168801100	GL393	
IC104	2168411105	HA12016	
IC105	2168017132	LC7821	
IC106	2168206107	KIA6259P	
Transistors			
Q101	2008409101	LM9018 NPN	
Q102	2018211100	FET, 2SK168	
Q103	2208606108	KTC2240BL	
Q104/Q105	2208222105	KTA114YS	
Q106	2208206105	KTA1015	
Q107L/R	2208606112	2SD1302	
•	3928801930	Front end Pack, Pack FE306–A15	
•	3928801890	Front edn Pack, Pack FE407–G60	
X–TAL	3908101030	Crystal 7.2MHz	
Resistors			
R101	3069563970	56kΩ	D
R102	3069104970	100kΩ	D
R103–R105	3069101970	100Ω	
R106	3069103970	10kΩ	
R107	3069104970	100kΩ	
R108	3069152970	1.5kΩ	
R109–R111	3069101970	100Ω	
R112	3039221372	M.O., 220Ω1/2W	
R112–1	3069101970	100Ω	
R113	3069821970	820Ω	
R114	3069104970	100kΩ	
R115	3069561970	560Ω	
R116	3069471970	470Ω	
R117	3069332970	3.3kΩ	
R118	3069331970	330Ω	
R119	3069332970	3.3kΩ	
R120	3069103970	10kΩ	
R121	3069820970	82Ω	
R122	3069472970	4.7kΩ	
R123	•	Not used !	
R124	3069183970	18kΩ	A,DOM.
(R124)	3069393970	39kΩ	C,D,E,F
R125	3069823970	82kΩ	
R126	3069103970	10kΩ	
R127	3069472970	4.7kΩ	
R128	3069683970	68kΩ	
R129	3069243970	24kΩ	
R130	3069222970	2.2kΩ	A,DOM.
(R130)	3069332970	3.3kΩ	C,D,E,F
R131	3069272970	2.7kΩ	A,DOM.
(R131)	3069182970	1.8kΩ	C,D,E,F
R132	3069104970	100kΩ	
R133/R134	3069103970	10kΩ	
R135	3069474970	470kΩ	
R136	•	Not used !	
R137	3069103970	10kΩ	
R138	3069332970	3.3kΩ	
R139	3069562970	5.6kΩ	
R140	3069683970	68kΩ	
R141	3069103970	10kΩ	
R142	3069470970	47Ω	
R143	3069472970	4.7kΩ	
R144	•	Not used !	
R145	3069562970	5.6kΩ	
R146	3069102970	1kΩ	
R147	3069104970	100kΩ	
R148	3069223970	22kΩ	
R149	3069470970	47Ω	
R150L/R	3069332970	3.3kΩ	A,DOM.
(R150L/R)	3069102970	1kΩ	C,D,E,F
R151L/R	3069223970	22kΩ	
R152L/R	3069332970	3.3kΩ	
R153	3069392970	3.9kΩ	
R154L/R	3069473970	47kΩ	
R155L/R	3069332970	3.3kΩ	
R156L/R	3069102970	1kΩ	
R157L/R	3069102970	1kΩ	
R158L/R	3069121970	120Ω	D
R159	3069102970	1kΩ	
R160L/R	3069121970	120Ω	
R161L/R	3069102970	1kΩ	
R162L/R	3069121970	120Ω	
R163L/R	3069102970	1kΩ	
R164L/R	3069104970	100kΩ	
R165L/R	3069104970	100kΩ	
R166L/R	3069911970	910Ω	

Ref.No	Part No.	Description	Remark
R167L/R	3069433970	43kΩ	
R168L/R	3069564970	560kΩ	
R169L/R	3069102970	1kΩ	
R170L/R	3069104970	100kΩ	
R171/R172	3069470970	47Ω	
R173/R175	3069470970	47Ω	
R174L/R	3069332970	3.3kΩ	
R176	3069104970	100kΩ	
VR101/V102	3248050343	50kΩ(B)	
VR104	3248050243	5kΩ(B)	
VR105	3248020443	200kΩ(B)	

Tone Board 4002020910

Capacitors

C201/C202	3479247041	Electric SA 47μF 25V M	
C203L/R	3479247971	Electric SA 4.7μF 50V M	
C204L/R	3579820130	Ceramic 82pF 50V J	
C205	3479247971	Electric SA 4.7μF 50V M	
C205L/R	3579221130	Ceramic 220pF 50V J	
C206L/R	3579470130	Ceramic 47pF 50V J	
C207L/R	3579820130	Ceramic 82pF 50V J	
C208L/R	3579561130	Ceramic 560pF 50V J	
C209L/R	3479210971	Electric SA 1μF 50V M	
C210L/R	3479247971	Electric SA 4.7μF 50V M	
C211/C212	3479247041	Electric SA 47μF 25V M	
C213L/R	3479247971	Electric SA 4.7μF 50V M	
C214L/R	3679223120	Mylar 0.022μF 100V J	
C215L/R	3679223120	Mylar 0.022μF 100V J	

Connectors

CNT201	4119103163	Assy 3P 160mm to Main B'D	
CNT202	4358103356	Shield 3P 350mm to Motor Volume B'D	
CNT203	4358103502	Shield 3P 500mm to Pre-Main B'D	
CNT301	4119103083	Assy 3P 80mm to Main B'D	

IC

IC201L/R	2168206104	KIA75559P	

Resistors

R201/R202	3069470970	47Ω	
R203L/R	3069102970	1kΩ	
R204L/R	3069224970	220kΩ	
R205L/R	3069225970	2.2MΩ	
R206L/R	3069104970	100kΩ	
R207L/R	3069820970	82Ω	
R208	3069181970	180Ω	
R208L/R	3069561970	560Ω	
R209L/R	3069333970	33kΩ	
R210L/R	3069203970	20kΩ	
R211L/R	•	Not used !	
R212L/R	3069103970	10kΩ	
R213L/R	3069203970	20kΩ	
R214L/R	•	Not used !	
R215L/R	3069222970	2.2kΩ	

Ref.No	Part No.	Description	Remark

CPU Board 4002020810

Capacitors

C401	3439147312	Electric SA 0.047μF 5.5V M	
C402	3579223530	Ceramic 0.022μF 50V Z	
C403	•	Not used !	
C404–C406	3579101130	Ceramic 100pF 50V J	
C407	3579223530	Ceramic 0.022μF 50V J	
C408/C409	3579101130	Ceramic CH 27pF 50V J	
C410–C413	3579101130	Ceramic 100pF 50V J	
C414	3579103530	Ceramic 0.01μF 50V J	
C415	3479210971	Electric SA 1μF 50V M	

Connectors

CNT102	4119111143	Assy 11P 140mm to Tuner B'D	
CNT303	4119103343	Assy 3P 340mm to Pre-Main B'D	
CNT401	4119105262	Assy 5P 260mm to Power Switch B'D	
CNT402	4428513420	Plug 2P	
CNT403	4119103143	Assy 3P 140mm to Receiver B'D	
CNT404	4119103143	Assy 3P 140mm to Motor Volume B'D	
CNT701	4119107183	Assy 7P 180mm to Main B'D	

Diodes

D401–D404	2058306101	1N4148	
D405	2258522116	Zener 9.1BM	
D406–D412	2058306101	1N4148	
D411	2258522110	Zener 5.1BM	
D413	2371124701	LED, SLR34URC(Red)	

IC

IC401	2138313151	CPU μD75212	

Resistors

R40–R43	3069272970	2.7kΩ	
R44–R400	•	Not used !	
R401–R407	3069102970	1kΩ	
R408/R409	3069103970	10kΩ	
R410	3069472970	4.7kΩ	
R411/R412	3069331970	330Ω	
R413	3069682970	6.8kΩ	
R414	3069390970	39Ω	
R415	3069391970	390Ω	
R416	3069103970	10kΩ	
R417	3069105970	1MΩ	
R418–R421	3069123970	12kΩ	
R422	3069391970	390Ω	
R423	3069562970	5.6kΩ	
R424	•	Not used !	
R425	3069473970	47kΩ	
R426	3069223970	22kΩ	

Transistors

Q401	2208206105	KTA1015 PNP	
Q402–Q404	2208606104	KTC1815 NPN	
•	2328130922	FL Display, FIP8 CPM8	
•	3938131460	Resonator, 4.19MHz	

Ref.No	Part No.	Description	Remark
Motor Volume Board 4002020820			
Capacitors			
C601L/R	3579151130	Ceramic 150pF 50V J	
C602L/R	3679563120	Mylar 0.056µF 100V J	
C603/C604	3479210131	Electric SA 100µF 16V M	
Connectors			
CNT101	4119104063	Assy 4P 60mm to Tuner BD	
CNT202	4428525240	Plug 3p	
CNT404	4428525240	Plug 3P	
IC			
IC402	2168007204	TA7291S	
Resistors			
R601	3069470970	47Ω	
R601L/R	3069333970	33kΩ	
R602L/R	3069622970	6.2kΩ	
R603	3069103970	10kΩ	
R604	3069472970	4.7kΩ	
Speaker Board 4002020830			
Resistor			
R501L/R	3039471576	M.O., 470Ω2W	
Connector			
CNT702	4428513480	Plug 8P	
Speaker Impedance Selector Board 4002020840			
Connectors			
CNT804	4428525810	PCB Pin 5P From Trans	
CNT805	4428525790	PCB Pin 3P to Main BD	
Outlet Board 4002020850			
Connector			
CNT803	4428525790	PCB Pin 3P	A
•	4225001410	Terminal Pin Solder	A
Power Switch Board 4002020860			
Diode			
D415	2371124701	LED, SLR 34URC(Red)	
Receiver Board 4002020870			
Connectors			
CNT403	4428513430	Plug 3P	
CNT33-1	4428513430	Plug 3P	A
IC			
Sensor	2408513430	Sensor, KRM-88	

Ref.No	Part No.	Description	Remark
Volume LED Board 4002020880			
Connector			
CNT402	4358102184	Assy 2P 180mm to CPU B'D	
Diode			
D414	2371124701	LED, SLR 34URC(Red)	
Pre-Main Board 4002020920			
Connectors			
CNT203	4428513430	Plug 3P	
CNT301	4358103502	Shield 3P 500mm to Main B'D	
CNT303	4428513430	Plug 3P	
Diode			
D301	2058306101	1N4148	
Resistors			
R301	3069223970	22kΩ	
R302	3069224970	220kΩ	
Remocon Board 4005113400			
Capacitors			
C801/C802	3579101130	Ceramic 100pF 50V J	
C803	3409247021	Electric SA 47µF 10V M	
Diodes			
D802	2408001100	LED IREL2	
IC			
IC801	2138313140	MN15814KA-A	
Resistors			
R802-R805	3069224970	220kΩ	
Resonator	3938001001	Resonator, CSB455E	
Transistor	Q801	2208606112	
Transistor			
Q801	2208606112	KTD1302S	

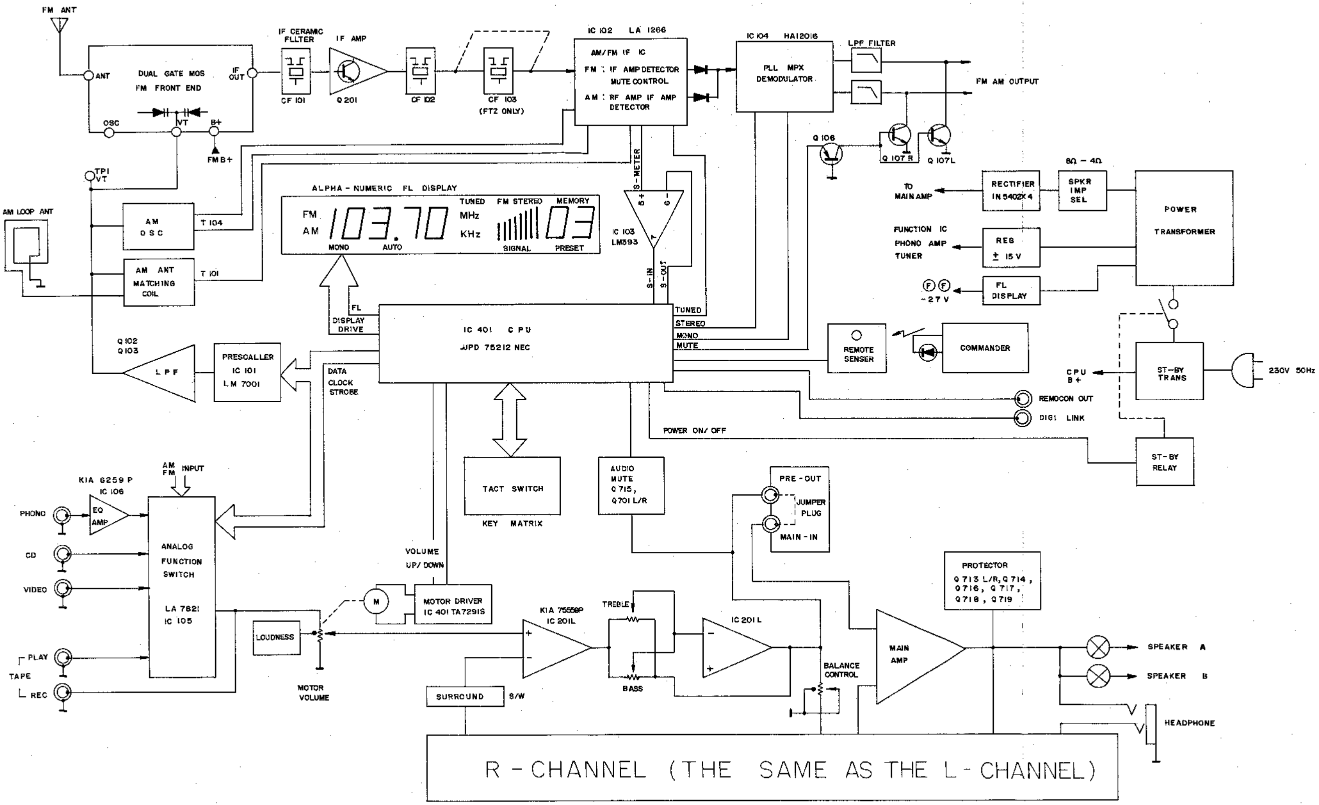
Mechanical Parts List

No.	Description	Part No.	Q'ty	Remark
1	Cover Top, Black	046122021521	1	
2	Bottom Cover	6122417010	1	
3	Bracket P.C.Board	6505101310	1	
4	Bracket P.C.Board	6503018410	1	
5	Bracket Heat Sink	6502002010	1	
6	Foot, Gold	046033101611	2	
7	Foot, Black	6033101610	2	A,B
(7)	Foot, Gold	046033101611	2	C,D,E,F
8	Frame Side(L)	6123620240	1	
9	Frame Side(R)	6123620211	1	
10	Heat Sink Power	7503012710	1	
11	Holder TR	6515002312	2	
12	Button Surround, Black	8545082910	1	
13	Shield Fence	6165139210	1	
14	Shield Fence	6165139110	2	
15	Button Speaker, Black	8545082210	2	
16	Bracket Phone	6505108310	1	
17	Regulator TR Heatsink	7505206210	1	
18	Panel Front, Black	048501019411	1	
19	Badge, Black	048535031911	1	
20	Indicator	8545082010	3	
21	Shield Fence	6163110810	1	
22	Button Power, Black	8545074330	1	
23	Button Spring	6555004380	1	
24	Button Sleep, Black	8545082110	1	
25	Knob Tone, Black	048545082911	3	
26	Window Display, Wine	048553012011	1	
27	Button Preset, Black	8543033010	1	
28	Button Function, Black	048543033111	1	
29	Window Sensor, Dark Wine	048555033711	1	
30	Bezel AMFM, Black	048545082411	1	
31	Button AMFM, Black	8545082510	2	
32	Button Mute, Black	8545082610	2	
33	Button Spring	6555002510	2	
34	Knob Volume, Black	8543033210	1	
35	Chassis Back, Black	046102029721	1	A
(35)	Chassis Back, Black	046102029731	1	B
(35)	Chassis Back, Black	046102029741	1	C
(35)	Chassis Back, Black	046102029751	1	D
(35)	Chassis Back, Black	046102029761	1	E
(35)	Chassis Back, Black	046102029771	1	F
36	Terminal Ground	4408103720	1	
37	Cord AC Power, Black	4308001410	1	A
(37)	Cord AC Power, Black	4308001410	1	B
(37)	Cord AC Power, Black	4308000430	1	C
(37)	Cord AC Power, Black	4308000430	1	D
(37)	Cord AC Power, Black	4308003610	1	E
(37)	Cord AC Power, Black	4308000430	1	F
38	Stopper Cord, Black	6518000710	1	A
(38)	Stopper Cord, Black	6518000710	1	B
(38)	Stopper Cord, Black	6518000111	1	C
(38)	Stopper Cord, Black	6518000111	1	D
(38)	Stopper Cord, Black	6518000111	1	E
(38)	Stopper Cord, Black	6518000111	1	F
39	Switch Tact	4658003710	26	
40	Switch Push, Speaker	4628058410	1	
41	Switch Push, Surround	4628056410	1	
42	Switch Push, Loudness	4628056310	1	
43	VR Bass/Treble	3208041810	2	
44	VR Balance	3208052010	1	
45	Jack Phone, Gold	4438005020	1	
46	VR Motor	3228013810	1	
47	Switch Slide	4618006510	1	
48	Terminal Aantenna	4408001510	1	A
(48)	Terminal Aantenna	4408001510	1	B
(48)	Terminal Aantenna	4408001610	1	C
(48)	Terminal Aantenna	4408001610	1	D
(48)	Terminal Aantenna	4408001610	1	E
(48)	Terminal Aantenna	4408001610	1	F
49	Jack RCA, 4P	4438103110	1	
50	Jack RCA, 6P	4438103210	1	
51	Jack RCA Digilink	4438109010	1	
52	AC Out let	4448102710	1	A
(52)	AC Out let	4448102710	1	B
(52)	AC Out let	4448103610	1	C
(52)	AC Out let	4448103610	1	D
53	Terminal Speaker	4408105510	1	
54	Plug Jumper	4328204210	2	
55	Jack Multi	4438006610	1	

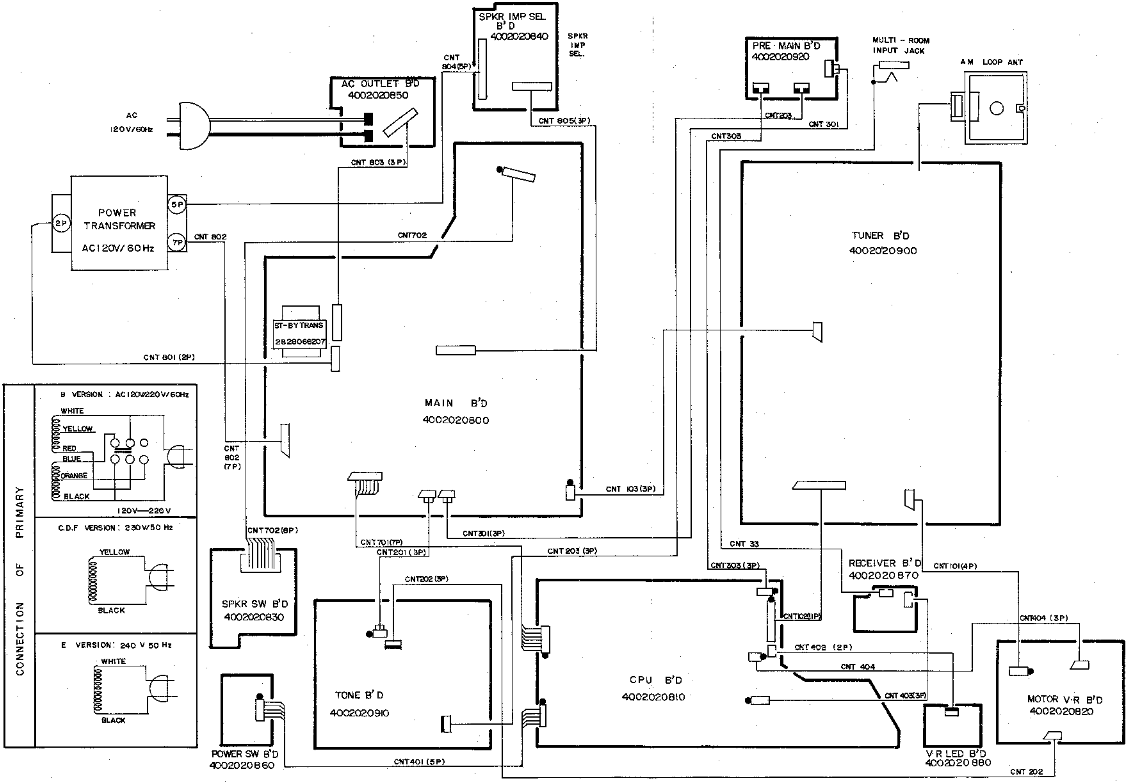
Screws

S1	WSAM 4X8 ZNB	8159440083	8	
S2	#2 BTC 3X8 ZNB	8109230083	61	
S3	#2 FTC 3X8 ZNB	8129230083	3	
S4	#2 WPTC 3X8 ZNY	8159230081	9	
S5	HEX MSW 3X12 ZNY	8499130121	4	
S6	#3 BTC 3X8 ZNB	8109330083	4	
S7	#2 BTC 2.6X8 ZNB	8109226083	2	

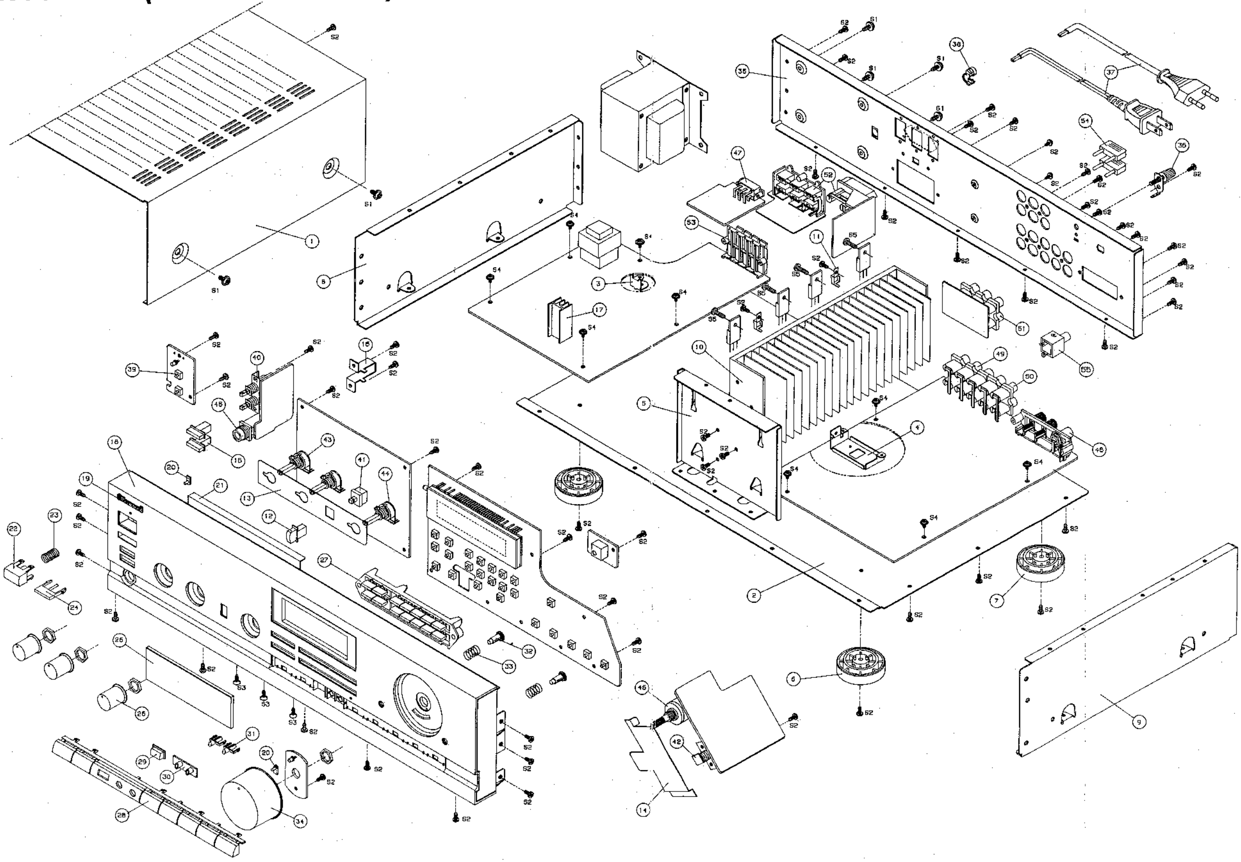
Block Diagram


FM ANT
ANT
DUAL GATE MOS
FM FRONT END
IF OUT
OSC
VT
B+
FM B+
IF CERAMIC FLLTER
IF AMP
CF 101
Q 201
CF 102
CF 103
(FTZ ONLY)
IC 102 LA 1266
AM/FM IF IC
FM : IF AMP DETECTOR MUTE CONTROL
AM : RF AMP IF AMP DETECTOR
IC 104 HA12016
PLL MPX DEMODULATOR
LPF FILTER
FM AM OUTPUT
Q 106
Q 107 R
Q 107L
TP1 VT
AM LOOP ANT
AM OSC
T 104
AM ANT MATCHING COIL
T 101
ALPHA - NUMERIC FL DISPLAY
FM
AM
103.70
MHz
KHz
TUNED
FM STEREO
MEMORY
03
MONO
AUTO
SIGNAL
PRESET
S-METER
5 +
6 -
7
IC 103
LM393
S-IN
S-OUT
FL
DISPLAY DRIVE
IC 401 CPU
μPD 75212 NEC
TUNED
STEREO
MONO
MUTE
Q 102
Q 103
LPF
PRESCALLER
IC 101
LM 7001
DATA
CLOCK
STROBE
8Ω - 4Ω
TO MAIN AMP
RECTIFIER
IN 5402X 4
SPKR IMP SEL
POWER TRANSFORMER
FUNCTION IC
PHONO AMP
TUNER
REG
± 15 V
F F
-27 V
FL DISPLAY
REMOTE SENSER
COMMANDER
CPU B+
ST-BY TRANS
230V 50Hz
REMOCON OUT
DIGI LINK
POWER ON/ OFF
ST-BY RELAY
TACT SWITCH
KEY MATRIX
AUDIO MUTE
Q 715,
Q701 L/R
PRE - OUT
JUMPER PLUG
MAIN - IN
AM FM INPUT
KIA 6259 P
IC 106
EQ AMP
PHONO
CD
VIDEO
PLAY
TAPE
REC
ANALOG FUNCTION SWITCH
LA 7821
IC 105
VOLUME UP/ DOWN
M
MOTOR DRIVER
IC 401 TA7291S
LOUDNESS
MOTOR VOLUME
KIA 75558P
IC 201L
TREBLE
BASS
IC 201 L
SURROUND
S/W
BALANCE CONTROL
MAIN AMP
PROTECTOR
Q 713 L/R, Q 714,
Q 716, Q 717,
Q 718, Q 719
SPEAKER A
SPEAKER B
HEADPHONE
R - CHANNEL (THE SAME AS THE L - CHANNEL)

Wiring Diagram


SPKR IMP SEL B'D
4002020840
SPKR IMP SEL.
CNT 804(5P)
AC OUTLET B'D
4002020850
AC
120V/60Hz
CNT 803 (3P)
CNT 805(3P)
POWER TRANSFORMER
AC120V/60Hz
2P
5P
7P
CNT 802
CNT702
ST-BY TRANS
2828066207
CNT 801 (2P)
MAIN B'D
4002020800
CNT 802 (7P)
CNT 103(3P)
PRE·MAIN B'D
4002020920
MULTI - ROOM INPUT JACK
AM LOOP ANT
CNT203
CNT 301
CNT303
TUNER B'D
4002020900
CONNECTION OF PRIMARY
B VERSION : AC120V/220V/60Hz
WHITE
YELLOW
RED
BLUE
ORANGE
BLACK
120V—220V
C.D.F VERSION : 230V/50 Hz
YELLOW
BLACK
E VERSION : 240 V 50 Hz
WHITE
BLACK
CNT702(8P)
SPKR SW B'D
4002020830
CNT701(7P)
CNT201 (3P)
CNT301(3P)
CNT 203 (3P)
CNT202(3P)
CNT 33
CNT303 (3P)
RECEIVER B'D
4002020870
CNT101(4P)
CNT102(1P)
CNT404 (3P)
CNT 402 (2P)
CNT 404
CNT 403(3P)
TONE B'D
4002020910
CPU B'D
4002020810
MOTOR V·R B'D
4002020820
V·R LED B'D
4002020880
POWER SW B'D
4002020860
CNT401 (5P)
CNT 202

Exploded View(Cabinet & chassis)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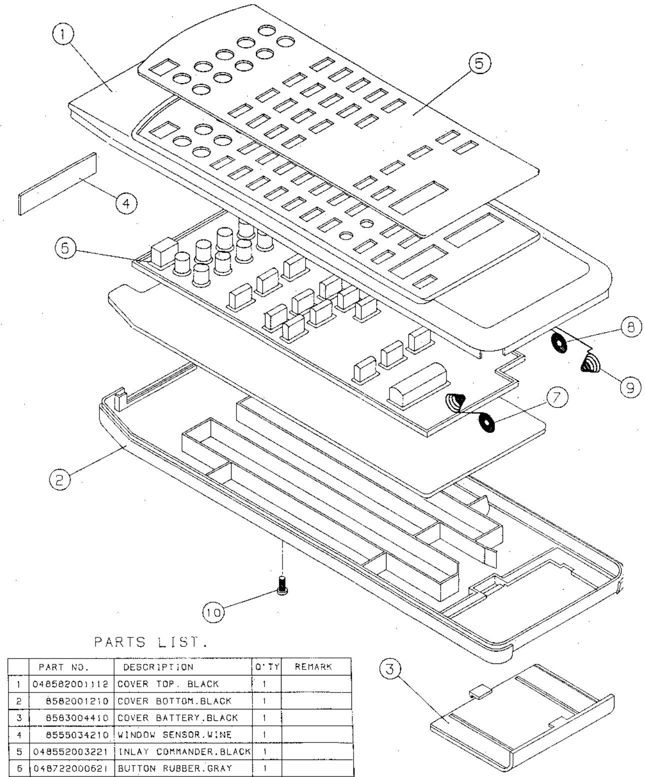
S1
S2
S3
S4
S5

Exploded View(Remocon Ass'y)

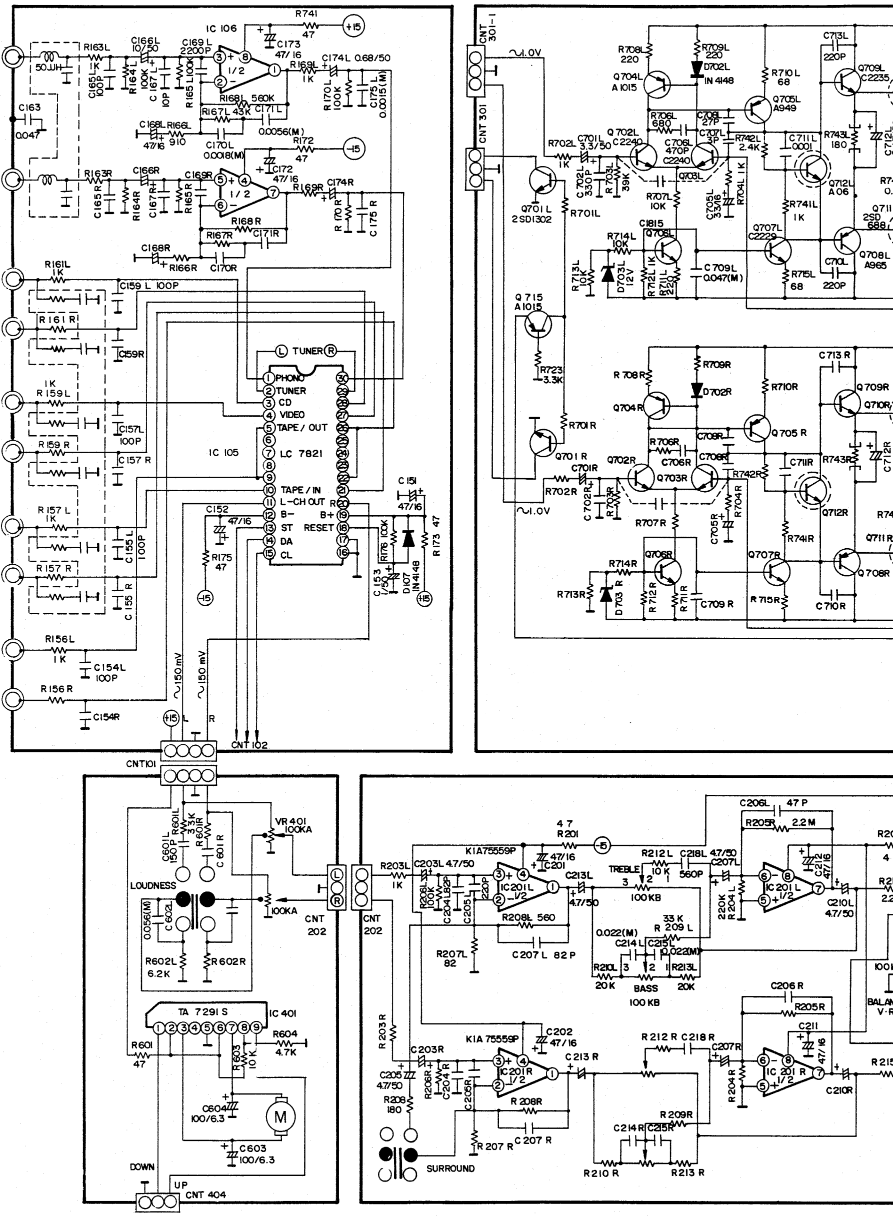


PARTS LIST.

	PART NO.	DESCRIPTION	Q'TY	REMARK
1	048582001112	COVER TOP. BLACK	1	
2	8582001210	COVER BOTTOM.BLACK	1	
3	8583004410	COVER BATTERY.BLACK	1	
4	8555034210	WINDOW SENSOR.WINE	1	
5	048552003221	INLAY COMMANDER.BLACK	1	
6	048722000621	BUTTON RUBBER.GRAY	1	
7	6555605310	SPRING BATTERY (+.-)	1	
8	6555009710	SPRING BATTERY (+)	1	
9	6555009810	SPRING BATTERY (-)	1	
10	8119620084	SCREW #2 PC2X8 ZNB	1	

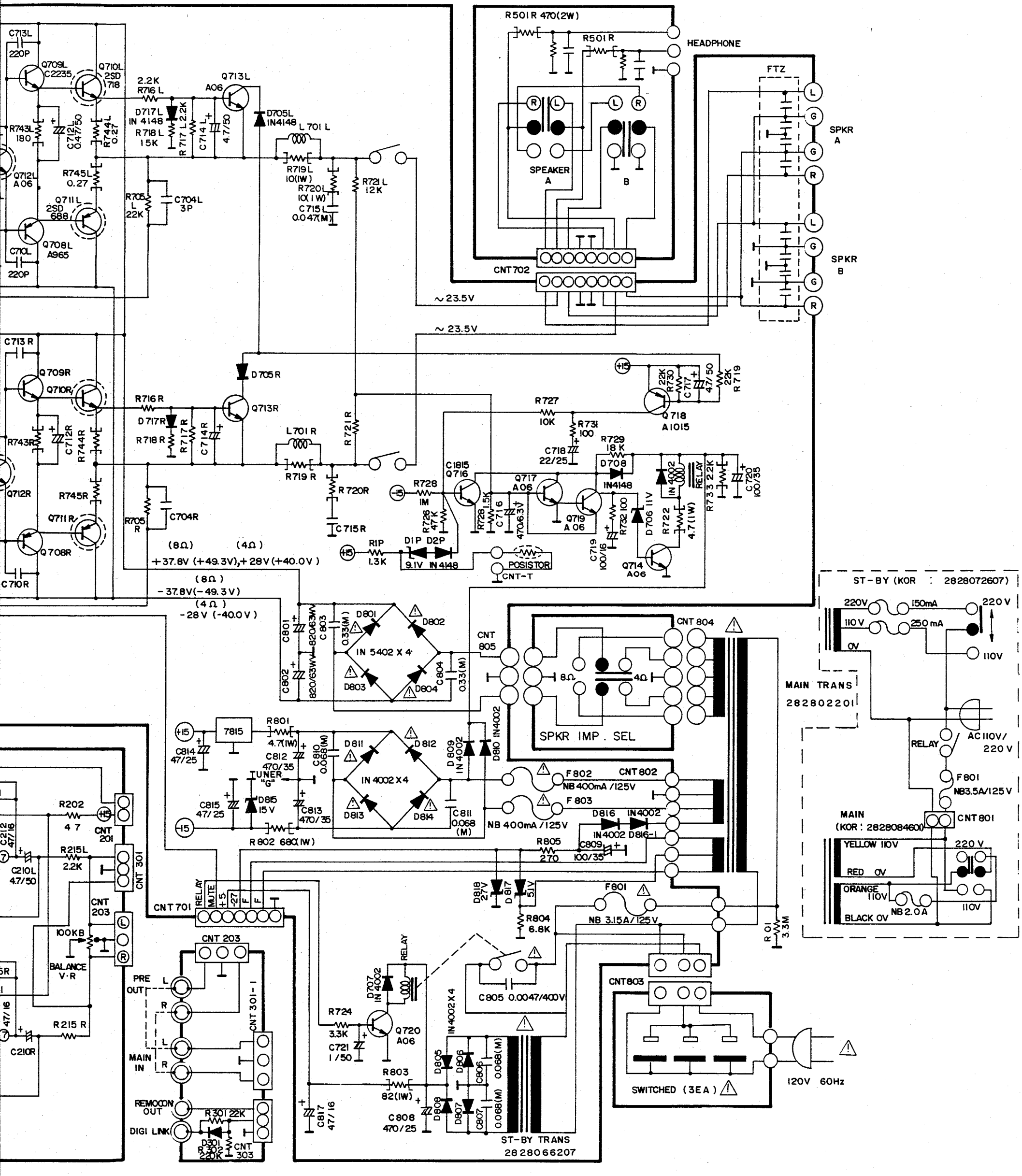
Note

Schematic Diag

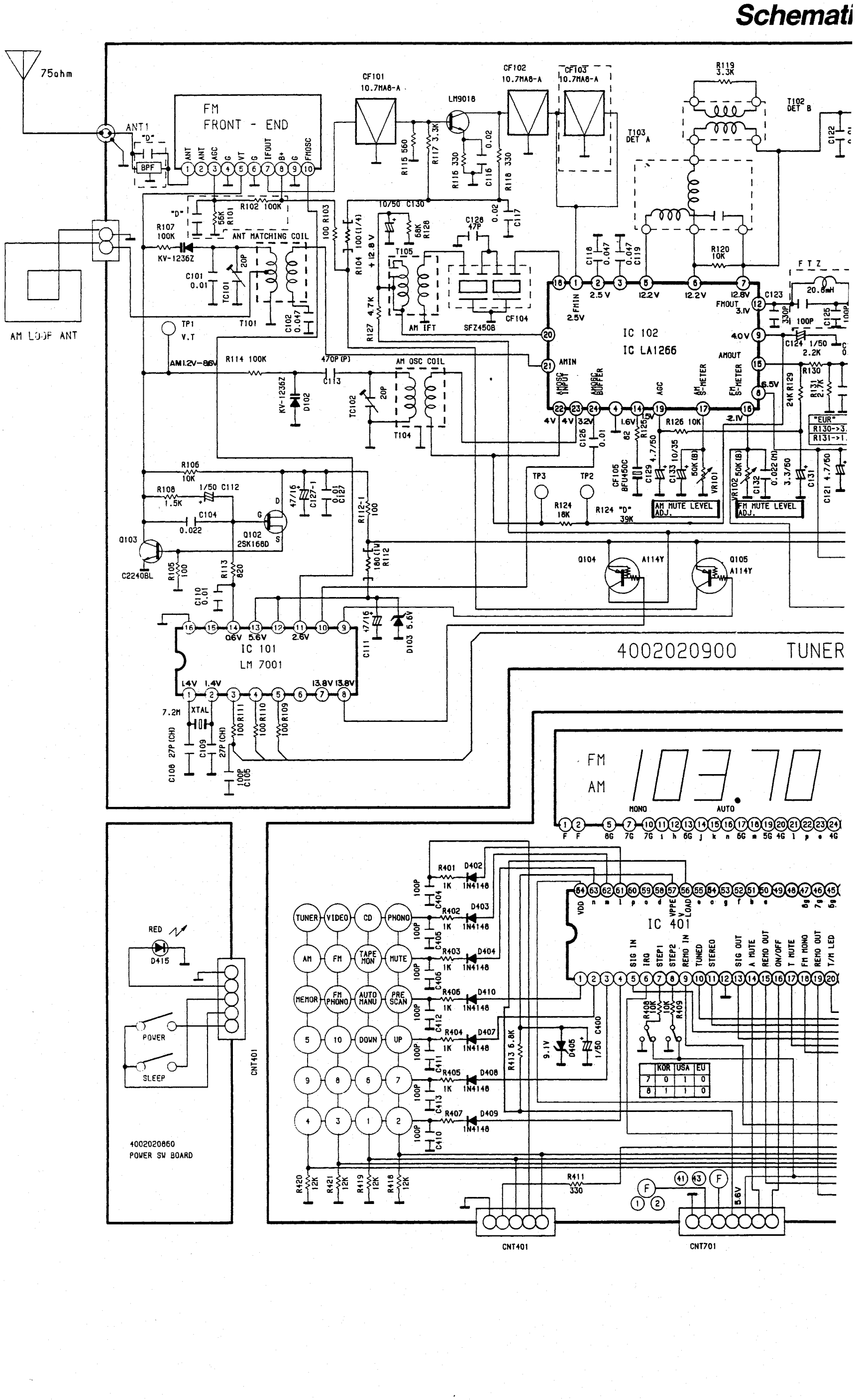


PHONO
CD
VIDEO
TAPE IN
TAPE OUT
L
R
IC 106
1/2
R741 47
+15
-15
C173 47/16
C174L 0.68/50
C172 47/16
R172 47
R163L 1K
C166L 10/50
C169L 2200P
R168L 560K
R167L 43K
C171L 0.0056(M)
C170L 0.0018(M)
C168L 47/16
R166L 910
C163 0.047
50μH
IC 105
LC 7821
TUNER
PHONO
CD
VIDEO
TAPE/OUT
TAPE/IN
L-CH OUT
B-
ST
DA
CL
B+
RESET
C151 47/16
C152 47/16
R175 47
R176 100K
C153 1/50
D107 IN4148
R173 47
R161L 1K
C159L 100P
R159L 1K
C157L 100P
R157L 1K
C155L 100P
R156L 1K
C154L 100P
~150mV
CNT 102
CNT101
CNT 301
CNT 301-1
~1.0V
Q701L 2SD1302
Q702L C2240
Q704L A1015
Q705L A949
Q706L C1815
Q707L C2229
Q708L A965
Q709L C2235
Q712L A06
Q715 A1015
R723 3.3K
D702L IN4148
D703L 12V
R708L 220
R709L 220
R710L 68
R741L 1K
R715L 68
C713L 220P
C710L 220P
C709L 0.047(M)
R743L 180
R742L 2.4K
C711L 0.001
C701L 3.3/50
C702L 330P
R703L 39K
R707L 10K
R714L 10K
R713L 10K
C706L 470P
C705L 33/16
C708L 27P
C707L 5P
R706L 680
R704L 1K
R702L 1K
VR401 100KA
100KA
LOUDNESS
C601L 150P
R601L 3.3K
C602 0.0056(M)
R602L 6.2K
CNT 202
TA 7291S
IC 401
R601 47
R603 10K
R604 4.7K
C604 100/6.3
C603 100/6.3
M
DOWN
UP
CNT 404
KIA75559P
IC201L 1/2
IC201R 1/2
R201 47
C201 47/16
C202 47/16
R203L 1K
C203L 4.7/50
R206L 100K
C204L 82P
C205L 220P
R208L 560
R207L 82
C207L 82P
C213L 4.7/50
TREBLE
R212L 10K
C218L 4.7/50
560P
100KB
R209L 33K
C214L 0.022(M)
C215L 0.022(M)
R210L 20K
R213L 20K
BASS
100KB
C206L 47P
R205R 2.2M
C212 47/16
C210L 4.7/50
220K
C205 47/50
R208 180
SURROUND
BALAN

ic Diagram(I)


C713L
220P
Q709L
C2235
Q710L
2SD
718
2.2K
R716 L
Q713L
A06
D705L
IN4148
D717L
IN 4148
R718 L
15K
R717 L 2.2K
C714 L
4.7/50
L 701 L
R743L
180
C712L
0.47/50
R744L
0.27
R745L
0.27
Q712L
A06
Q711L
2SD
688
R705 L
22K
C704L
3P
R719L
10(1W)
R720L
10(1 W)
C715L
0.047(M)
R721 L
12K
C710L
220P
Q708L
A965
R501R 470(2W)
R501R
HEADPHONE
SPEAKER
A
B
FTZ
L
G
R
SPKR
A
SPKR
B
CNT702
~23.5V
~23.5V
C713 R
Q709R
Q710R
D705R
R716 R
Q713R
D717R
R718 R
R717 R
C714 R
R743R
C712R
R744R
L701 R
R721 R
R719 R
R720R
C715R
Q712R
R745R
Q711R
R705
R
C704R
Q708R
C710R
+15
22K
R730
C717
47/50
22K
R719
R727
10K
R731
100
Q718
A1015
C718
22/25
R729
18 K
D708
IN4148
C1815
Q716
Q717
A06
R728
1M
-15
R726
47K
R728 1.5K
C716
470/6.3V
Q719
A06
R732 100
C719
100/16
D706 11V
R722
4.7(1W)
IN4002
RELAY
R733 2.2K
C720
100/35
Q714
A06
(8Ω)
(4Ω)
+37.8V (+49.3V),+28V (+40.0V)
+15
R1P
1.3K
D1P D2P
9.1V
IN4148
POSISTOR
CNT-T
(8Ω)
-37.8V(-49.3V)
(4Ω)
-28V (-40.0V)
C801
C802
820/63WV
820/63WV
C803
0.33(M)
D801
D802
IN 5402 X 4
D803
D804
C804
0.33(M)
CNT
805
CNT 804
8Ω
4Ω
SPKR IMP. SEL
ST-BY (KOR : 2828072607)
220V
150mA
220V
110V
250 mA
0V
110V
MAIN TRANS
282802201
7815
R801
4.7(1W)
C814
47/25
C812
470/35
TUNER
"G"
C810
0.068(M)
D811
D812
IN 4002 X4
D813
D814
C811
0.068
(M)
D809
IN4002
D810 IN4002
C815
47/25
D815
15V
C813
470/35
-15
R802 68Ω(1W)
F802
NB 400mA /125V
CNT 802
F 803
NB 400mA /125V
D816
IN4002
IN4002 D816-1
R805
270
C809
100/35
RELAY
AC110V/
220V
F801
NB3.5A/125V
MAIN
(KOR : 2828084600)
CNT801
YELLOW 110V
RED 0V
ORANGE
110V
BLACK 0V
NB 2.0A
220 V
110V
R202
47
CNT
201
C212
47/16
R215L
2.2K
C210L
4.7/50
CNT 301
CNT
203
100KB
BALANCE
V·R
CNT 701
RELAY
MUTE
+5
-27
F
F
D818
27V
D817
5.1V
R804
6.8K
F801
NB 3.15A/125V
R01
3.3M
CNT 203
PRE
OUT
L
R
MAIN
IN
CNT 301-1
47/16
R215 R
C210R
REMOCON
OUT
DIGI LINK
R301 22K
D301
R302
220K
CNT
303
D707
IN4002
RELAY
R724
3.3K
C721
1/50
Q720
A06
C805 0.0047/400V
CNT803
IN4002 X4
D805
D806
C806
0.068(M)
R803
82(1W)
C808
470/25
D808
D807
C807
0.068(M)
C817
47/16
ST-BY TRANS
2828066207
SWITCHED (3EA)
120V 60Hz

Schemati


75ohm
ANT1
BPF
AM LOOP ANT
FM FRONT - END
ANT ANT AGC G VT G IFOUT B+ G FMOSC
R107 100K
KV-1236Z
C101 0.01
TC101
20P
T101
R102 100K
R101 56K
ANT MATCHING COIL
R103 100
C102 0.047
TP1 V.T
AM1.2V-8.6V
R114 100K
D102
KV-1236Z
470P (P)
C113
TC102
AM OSC COIL
T104
CF101 10.7MA8-A
LM9018
R115 560
R117 3.3K
R116 330
C116
R118 330
CF102 10.7MA8-A
CF103 10.7MA8-A
T103 DET A
R119 3.3K
T102 DET B
C122
10/50 C130
R128 68K
C128 47P
C117 0.02
T105
R104 100 (1/4)
+12.8V
R127 4.7K
AM IFT
SFZ450B
CF104
C118 0.047
C119 0.047
R120 10K
FMIN
2.5V
12.2V
12.8V
FMOUT
3.1V
C123 330P
F T Z
20.6mH
100P
C125
C124 1/50
2.2K
IC 102
IC LA1266
AMIN
AMOUT
4.0V
AMOSC INPUT
AMOSC BUFFER
AGC
AM S-METER
FM S-METER
6.5V
R129 24K
R130
R131 2.7K
"EUR"
R130->3.
R131->1.
4V 4V 3.2V
1.6V
1.5V
R125 82
R126 10K
2.1V
C126 0.01
C129 4.7/50
C133 10/35
50K (B) VR101
CF105 BFU450C
VR102 50K (B)
C132 0.022 (M)
3.3/50
C131
C121 4.7/50
AM MUTE LEVEL ADJ.
FM MUTE LEVEL ADJ.
TP3
TP2
R124 18K
R124 "D" 39K
R106 10K
R108 1.5K
1/50 C112
C104 0.022
47/16 C127-1
0.01 C127
Q102 2SK168D
Q103
C2240BL
R105 100
R113 820
R112-1 100
180 (1W) R112
C110 0.01
Q104 A114Y
Q105 A114Y
C111 47/16
D103 5.6V
IC 101
LM 7001
0.6V 5.6V 2.6V
1.4V 1.4V 13.8V 13.8V
7.2M XTAL
C108 27P (CH)
C109 27P (CH)
R111 100
R110 100
R109 100
100P C105
4002020900 TUNER
FM
AM
103.70
MONO
AUTO
F F 8G 7G 7G i h 6G j k n 6G m 5G 4G l p e 4G
RED
D415
POWER
SLEEP
CNT401
4002020860 POWER SW BOARD
TUNER VIDEO CD PHONO
AM FM TAPE MON MUTE
MEMOR FM PHONO AUTO MANU PRE SCAN
5 10 DOWN UP
9 8 6 7
4 3 1 2
R401 1K D402 1N4148
R402 1K D403 1N4148
R403 1K D404 1N4148
R406 1K D410 1N4148
R404 1K D407 1N4148
R405 1K D408 1N4148
R407 1K D409 1N4148
100P C404
100P C405
100P C406
100P C412
100P C411
100P C413
100P C410
R420 12K
R421 12K
R419 12K
R418 12K
R411 330
R413 6.8K
9.1V D405
1/50 C400
IC 401
VDD n m l p o d VPPE LOAD e a g f b e
SIG IN IRQ STEP1 STEP2 REMO IN TUNED STEREO SIG OUT A MUTE REMO OUT ON/OFF T MUTE FM MONO REMO OUT T/M LED
R408 10K
R409 10K
KOR USA EU
7 0 1 0
8 1 1 0
F
1 2
41 43 F
5.6V
CNT401
CNT701

hematic Diagram(Ⅱ)

SERVICE INFORMATION

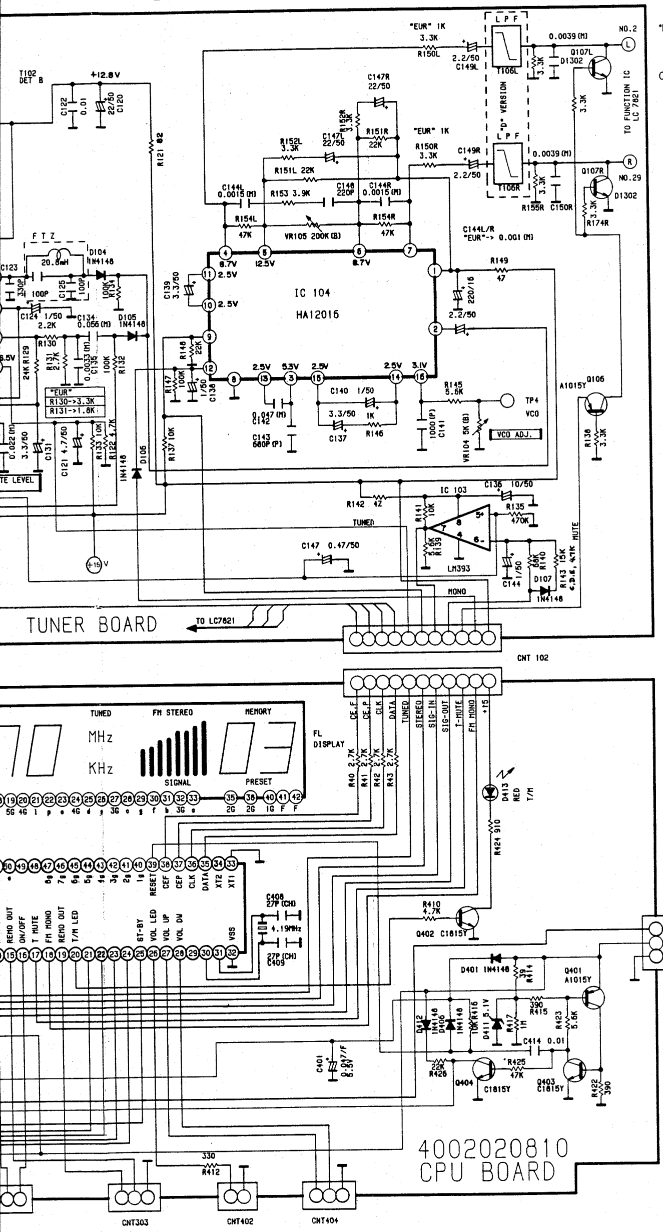
*NOTES 1. Resistance values are indicated in ohms unless otherwise specified(K=1,000 M=1,000,000).

2. Capacitance values are shown in microfarads unless otherwise noted(P=micro－micro farads).

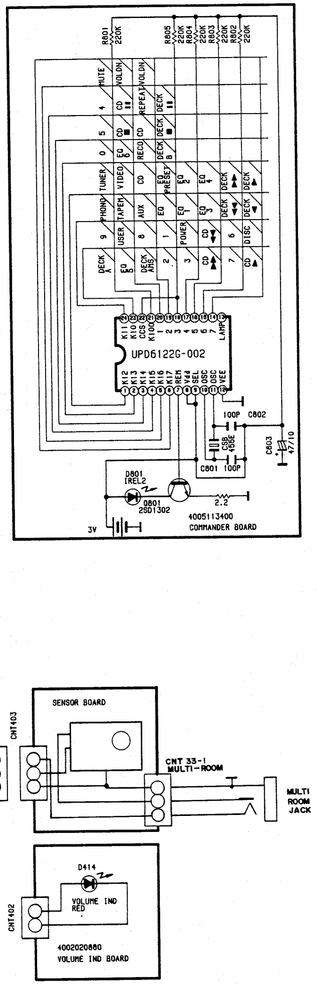
CAUTION : Safety precautions to be followed during servicing

1) Since those parts marked with ⚠ are critical parts for safety, use the one described in parts list.

2) Before returning the receiver to the customer make appropriate leakage current or resistance measurements to determine that exposed parts are properly insulated from the supply circuit.



TUNER BOARD
IC 104
HA12016
IC 103
LM393
LPF
"D" VERSION
TO FUNCTION IC LC 7821
TO LC7821
NO.2
NO.29
VCO ADJ.
TP4
VCO
+12.8V
T102 DET B
FTZ
"EUR"
R130->3.3K
R131->1.8K
C144L/R
"EUR"-> 0.001 (M)
TUNED
MONO
MUTE
CNT 102
FL DISPLAY
TUNED
FM STEREO
MEMORY
MHz
KHz
SIGNAL
PRESET
CE.F
CE.P
CLK
DATA
TUNED
STEREO
SIG-IN
SIG-OUT
T-MUTE
FM MONO
+15
RESET
CEF
CEP
CLK
DATA
XT2
XT1
VSS
REMO OUT
ON/OFF
T MUTE
FM MONO
REMO OUT
T/M LED
ST-BY
VOL LED
VOL UP
VOL DW
4.19MHz
D413 RED T/M
Q402 C1815Y
Q401 A1015Y
Q404 C1815Y
Q403 C1815Y
4002020810
CPU BOARD
CNT303
CNT402
CNT404



UPD6122G-002
MUTE
VOLDN
VOLUP
REPEAT
DECK
CD
RECO
TUNER
VIDEO
EQ
PRESET
PHONO
TAPEM
AUX
POWER
USER
DISC
DECK A
DECK ANS
LAMP
D801 IREL2
Q801 2SD1302
4005113400
COMMANDER BOARD
3V
CNT403
SENSOR BOARD
CNT 33-1 MULTI-ROOM
MULTI ROOM JACK
CNT402
D414
VOLUME IND RED
4002020880
VOLUME IND BOARD